REMARKS

Reconsideration is respectfully requested. Claims 1-5 and 8-24 are present in the application. Claims 8-23 are withdrawn, as directed to non-elected invention. Claim 1 is amended herein.

Claims 1-5 and 24 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Sugahara (JP 09-007591) in view of Hayashida (US 2001/0041292) and Katou (JP 2003-309327) and Okada (JP 2002-256301). Applicants respectfully traverse.

1. In the office action, the Examiner writes that "Regarding claim 1, Sugawara modified by Hayashida, Katou, Okada does not teach the hydrogen storing alloy particle further containing one or two or more metals selected from the group consisting of erbium, yttrium and ytterbium." and "It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Er, Yb, Y to the alloy composition of Sugawara, as taught by Kaneko, for the benefit of preventing the decrepitation due to absorption and desorption of hydrogen, thereby improving the battery life."

Kaneko teaches that a substitution of a portion of light rare earth elements of hydrogen storing alloy particle employed in the A-site by a particular elements including heavy rare earth elements ("reducing element L" for example y, Yb, Er) improves a battery life.

However it is described in the specification of the present application that "When conventional preparation processes are applied to alloys having yttrium, ytterbium, and erbium added into their compositions, it is impossible to obtain batteries having improved high-rate discharge capability because of slow activation. "(specification page 48, lines 1 to 5).

Even though Kaneko's invention makes improvements in terms of cycle life by containing Y, Yb and Er, it adopts the aforesaid "conventional preparation processes". In other words, Kaneko does not show that the "hydrogen storing alloy particle" has the limitation: "layers that contain more nickel than a matrix component does are located on a surface of cracks that open at the surface of said", and does not rely upon "treatment of said hydrogen alloy particle with cracks with an alkaline aqueous solution", either. Accordingly, there is no improvement in the high-rate discharge capability whatsoever, as can be seen from comparative examples 11 to 13 as tabulated below.

Table

example	Y,Yb,Er	cracks	treating time (h)	discharge capacity at 10ItA (%)
example1(comparative ex.)	0	yes	1.7	80
example11	Y 5%	yes	5	85
example12	Yb 5%	yes	10	81
example13	Er 5%	yes	20	82
comparative ex.1	0	no	2	4
comparative ex.11	Y 5%	no	2	3
comparative ex.12	Yb 5%	no	2	3
comparative ex.13	Er 5%	no	2	3

As shown in Table 5 (see below) at page 47 of the specification, on the other hand, example 11 (addition of 5% of Y), example 12 (addition of 5% of Yb), and example 13 (addition of 5% of Er) introduces improvements in terms of not only the number of cycles (cycle life) but also the discharge capacity at 10 ItA (high-rate discharge capacity) over example 1 containing none of Y, Yb and Er (note here that the treating time "0" is a clerical error for "1.7", and example 1 is provided as a comparative example by the amendment to the claims). Specifically, example 1 containing none of Y, Yb and Er (comparative example) shows 80% for the discharge capacity at 10

ItA and 800 for the number of cycles, whereas examples 11, 12 and 13 containing Y, Yb and Er show 85%, 81% and 82% for the discharge capacity at 10 ItA and 1,030, 900 and 920 for the number of cycles , respectively. Thus, the inventive examples are more improved than example 1 (comparative example) in terms of both the high-rate discharge capability and the cycle life.

Table15

example	treating time(h)	discharge capacity of the negative electrode(mAh)	discharge capacity at 10ItA(%)	number of cycles
example1(comparative example)	1.7	290	80	800
example11	5	286	85	1030
example12	10	286	81	900
example13	20	285	82	920

In other words, the present claimed subject matter is characterized in that "a hydrogen storing alloy that further contains one or two or more metals selected from the group consisting of erbium, yttrium, and ytterbium" are used to form "layers that contain more nickel than a matrix component does are located on a surface of cracks that open at the surface of said hydrogen storing alloy particle" as defined in Claim 1 by way of "treatment of said hydrogen storing alloy particle with said cracks with an alkaline aqueous solution", which is the inventive preparation process. Then, as a result, an effect of obtaining a high-rate discharge capability and remarkably improving the cycle life can be achieved.

As described above, however, Kaneko's invention teaches nothing about improvements in the high-rate discharge capability, and none of Sugahara, Hayashida and Katou say nothing about improvements in the high-rate discharge capability, either.

Okada's invention teaches that the starting powders are immersed in an NaOH aqueous solution at 90°C or higher for much the same time as applied in the present application into a hydrogen storing alloy particle thereby making improvements in the high-rate discharge capability. However, the hydrogen storing alloy particle has no "cracks" because it has not been subjected to any hydrogen storing treatment. Therefore, treatment at 90°C or higher with NaOH aqueous solutions of the "hydrogen storing alloy particle" having an amount of hydrogen stored of 0 and no "cracks" formed is substantially equivalent to comparative example 1 given in the specification, and is lower in terms of the "discharge capacity at ItA" than the inventive treatment wherein the "hydrogen storing alloy particle" having "cracks" is treated with the NaOH aqueous solution at 90°C or higher. That is, even though the starting powders are treated with the NaOH aqueous solution at 90°C or higher for much the same time as applied in the present invention into the "hydrogen storing alloy particle", the immersion treatment of the "hydrogen storing alloy particle having no "cracks" formed brings the discharge capacity at 10 ItA down to 3%, whereas the immersion treatment of the "hydrogen storing alloy particle" having "cracks" brings the

discharge capacity at 10 ItA up to 80% (see the aforesaid Table), meaning that the high-rate discharge capability is much more improved by the formation of "cracks". Such advantages could not have been anticipated even in view of Katou's invention teaching the formation of "cracks" but saying nothing about improvement in the high-rate discharge capability.

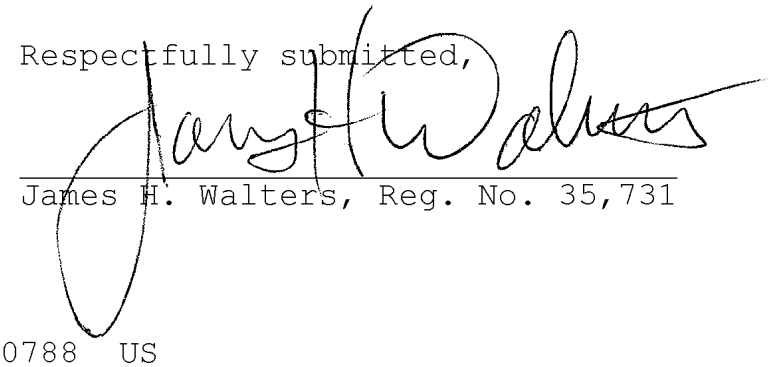
Therefore, is not obvious to those skilled in the art to use "a hydrogen storing alloy that further contains one or two or more metals selected from the group consisting of erbium, yttrium, and ytterbium" for a hydrogen storing alloy particle having "layers that contain more nickel than a matrix component does are located on a surface of cracks that open at the surface of said hydrogen storing alloy particle".

As has been described above, the present claimed subject matter is not obvious from the inventions of Sugahara, Hayashida, Katou, Okada and Kaneko.

In light of the above remarks, this application is believed in condition for allowance and notice thereof is respectfully solicited. The Examiner is asked to contact applicant’s attorney at 503-224-0115 if there are any questions.

It is believed that no further fees are due with this filing or that the required fees are being submitted herewith. However, if additional fees are required to keep the application pending, please charge deposit account 503036. If fee refund is owed, please refund to deposit account 503036.

Respectfully submitted,



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